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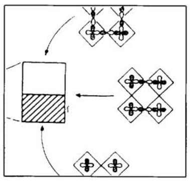
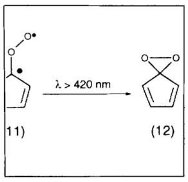


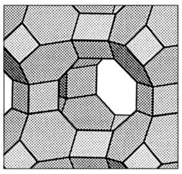
Some Aspects of the Metal-Insulator Transition *By Jeremy K. Burdett* (pp. 299-308)

Several aspects of metals and insulators are discussed in this review. After an introduction which shows the relationship between electronic descriptions and transport phenomena (and in which it is suggested that the term 'metallic bond' should be dropped), four interesting examples are examined. (i) The metallic behaviour of supported monolayers, (ii) the behaviour of the Group 2 metals under pressure, (iii) the band gap in d^6 perovskites, and (iv) high-temperature superconductors.



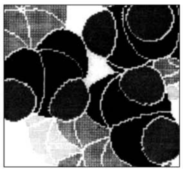
Photooxidation Reactions of Transition Metal Carbonyls in Low-temperature Matrices *By Matthew J. Almond* (pp. 309-317)

This article considers the photochemical reactions in low-temperature matrices in which transition metal carbonyls are oxidized. Typically the oxidant is dioxygen and the reactions proceed *via* oxocarbonyl intermediates (in which both CO and oxygen, in one form or another, are co-ordinated to the metal centre) to yield ultimately *molecular* metal oxides. Techniques for characterizing such species by infrared spectroscopy are discussed. The use of oxidants other than dioxygen and the oxidation of species other than binary carbonyls are mentioned.



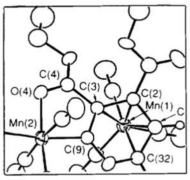
Aqueous Aluminates, Silicates, and Aluminosilicates *By Thomas W. Swaddle, Julian Salerno, and Peter A. Tregloan* (pp. 319-325)

Although aluminosilicates are commonly regarded as insoluble, the aqueous solution chemistry of aluminosilicate anions is important in various technological and biomedical contexts. NMR methods show that these anions resemble aqueous silicates, which form a remarkable range of small oligomeric structures in alkaline aqueous media, more closely than aqueous aluminium species, which show little structural diversity. The kinetic lability of many silicates and, especially, aluminates and aluminosilicates strongly influences their aqueous chemistry but limits the structural information obtainable from NMR spectra.



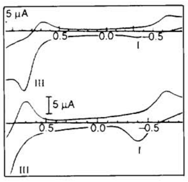
1,10-Phenanthroline: A Versatile Ligand *By Peter G. Sammes and Gokhan Yahioglu* (pp. 327-334)

Over the past decade the classical chelator, 1,10-phenanthroline, has been catapulted into a starring role in the field of supramolecular chemistry and molecular recognition. This review aims to illustrate the use of 1,10-phenantholine and its derivatives in areas such as the chiral recognition of DNA, as a probe for left-handed and right-handed forms; in DNA nicking reagents; as enzyme mimetics, promoting redox reactions; and as a sensitizer of europium in commercial heterogeneous immuno- and DNA assays, utilizing time-resolved luminescence. We report on our approach to the development of a homogeneous DNA assay using derivatives of this ligand.



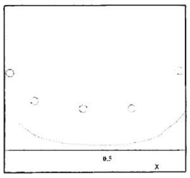
The Insertion of Alkynes into Metal-Metal Bonds and Organic Chemistry of the Dimetalled Olefin Complexes *By Richard D. Adams* (pp. 335-339)

Recent studies on the insertion of activated alkynes into the metal-metal bond of dinuclear manganese and rhenium carbonyl complexes to yield *Z*- and *E*-dimetalled olefin complexes are reviewed. The dimetalled olefins can be readily functionalized by the insertion of additional small molecules into the metal-carbon bonds. Removal of the metal atoms has resulted in the formation of some novel organic molecules.



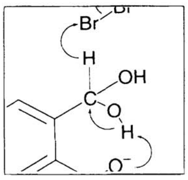
Electrochemical Solid State Analysis-State of the Art *By Fritz Scholz and Birgit Meyer* (pp. 341-347)

The direct electrochemical analysis of insoluble solid substances has always been a great challenge to electrochemists. Digestion of samples, for example, leads to loss of information concerning the structures of the solids. If the solid sample is electron-conducting itself, as metals and alloys are, it can be used as a solid electrode. Solid compounds which are insulators, or which do not have sufficient conductivity, can be introduced into a carbon paste or mechanically attached to solid electrodes. With the electrochemistry of solid compounds their qualitative and quantitative identification is possible and information on thermodynamics and on different modifications is accessible.



The Thermodynamics of Micellar Solubilization of Neutral Solutes in Aqueous Binary Surfactant Solutions *By Claude Treiner* (pp. 349-356)

Unlike surfactants may form mixed micelles in water, introducing new surfactant solution properties. This topic is reviewed for one of the most characteristic surfactant properties – the micellar solubilization of scarcely soluble compounds. It is shown how regular solution theory predicts and experiments confirm that, in general, mixed micelles are less favourable to micellar solubilization than single surfactant micelles. Exceptions are thoroughly discussed. The relevance of parameters such as surfactant partial demixing and polydispersity of non-ionic surfactants is considered.



Oxidation of Some Organic Compounds by Aqueous Bromine Solutions *By Josefina Palou* (pp. 357-362)

This review deals with oxidation of some common functional groups by bromine in aqueous media, and covers the literature from 1967 to 1992. Some generalities about the chemistry of bromine are presented in this article besides the kinetics and mechanism of oxidation of several organic substrates with aqueous bromine.

Articles that will appear in forthcoming issues include

Biological Activity, Reactivity, and Use of Chromotropic Acid and its Derivatives **J. Duda**

LIVERSIDGE LECTURE. The Dynamics of Photodissociation **R. N. Dixon**

Pericyclic Key Reactions in Biological Systems and Biomimetic Syntheses **U. Pindur and G. H. Schneider**

Mechanistic and Structural Investigations Based on the Isokinetic Relationship **W. Linert**

Benzotriazole Mediated Arylalkylation and Heteroarylalkylation **A. R. Katritzky and Xiangfu Lan**

HAWORTH MEMORIAL LECTURE. Experiments Directed Towards Glycoconjugate Synthesis **T. Ogawa**

Surfactant Systems: Their Use in Drug Delivery **M. J. Lawrence**

Molecular Mechanics Force Fields in Cyclopentadienyl Complexes **B. Bosnich**

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